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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,507	12/05/2003	Tadao Michishita	246111US2DIV	7835
22850	7590	06/21/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			WONG, EDNA	
		ART UNIT		PAPER NUMBER
		1753		

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/727,507	MICHISHITA ET AL.
	Examiner	Art Unit
	Edna Wong	1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 11-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 11 is/are allowed.
- 6) Claim(s) 12-49 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 05 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. 09/720,806.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 12/5/03 and 3/9/04.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_.

### ***Drawings***

Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Applicants' specification discloses that "Fig. 6 is an explanatory perspective view illustrating an example of the conventional ultraviolet irradiation apparatus for photochemical reactions" (page 13, lines 7-9).

### ***Specification***

I. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure

describes," etc.

The abstract of the disclosure is objected to because the abstract is more than 150 words and more than 1 paragraph long. Correction is required. See MPEP § 608.01(b).

**II.** The disclosure is objected to because of the following informalities:

page 1, line 6, a -- Cross-References to Related Applications -- paragraph should be inserted into the specification. See 37 CFR 1.78 and MPEP § 201.11.

page 22, line 6, reference character "44" has been used to designate both the reaction vessel and the cell container (from page 21, line 26). It is unclear what reference character "44" designates.

Appropriate correction is required.

***Claim Objections***

**I.** Claims **12, 23 and 45** are objected to because of the following informalities:

**Claim 12**

line 9, it is suggested that the word "means" be amended to the word -- is --. See claim 12, line 12.

line 10, it is suggested that the word "denotes" be amended to the word -- is --.

See claim 12, line 12.

line 15, it is suggested that the word "means" be amended to the word -- is --.

See claim 12, line 12.

Claim 23

line 2, "-CH<sub>2</sub>," should be amended to -- -CH<sub>2</sub> --.

Claim 45

line 2, "R<sub>3</sub>" should be amended to -- R<sup>3</sup> --.

Appropriate correction is required.

II. Claim 13 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n).

***Claim Rejections - 35 USC § 112***

Claims 12-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12

lines 5 and 16, the claim contains 2 periods.

Claim 13

line 1, it appears that this claim limitation is further limiting the process steps of claim 11. However, it is unclear if it is. If it is, then it is suggested that the word "comprising" be amended to the words -- further comprising --.

Furthermore, claim 11, line 1, already set forth the process steps with the word "comprising", thus, claim 13 should be -- further comprising --.

line 2, it appears that the "irradiating" is further limiting the irradiating step recited in claim 11, lines 6-9. However, it is unclear if it is.

line 2, it appears that "a provitamin D derivative" is the same as that recited in claim 12, line 2. However, it is unclear if it is. If it is, then it is suggested that the word "a" be amended to the word -- the --.

line 3, it appears that the "ultraviolet rays having a specific wavelength" are the same as those recited in claim 11, lines 4-5. However, it is unclear if they are. If they are, then it is suggested that the word -- the -- be inserted before the word "with".

lines 4-5, "to cause a photochemical reaction of the previtamin D derivative solution" lacks antecedent basis. Claim 11, lines 8-9, recites "to cause a photochemical reaction to the provitamin D derivative solution".

lines 4-5, it appears that "to cause a photochemical reaction of the previtamin D derivative solution" is the same as to cause a photochemical reaction to the provitamin D derivative solution. However, it is unclear if it is. If it is, then it is suggested that the word "previtamin" be amended to the word -- provitamin --.

lines 5-6, it appears that "a previtamin D derivative represented by the general formula 2" is the same as that recited in claim 12, lines 3-4. However, it is unclear if it is. If it is, then it is suggested that the word "a" be amended to the word -- the --.

#### ***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter:

Claims 11-49 define over the prior art of record because the prior art does not teach or suggest a process for preparing a vitamin D derivative comprising the steps of using, irradiating and subjecting as presently claimed, esp., wherein the ultraviolet rays having the specific wavelength from the optical system strikes a quartz rod, and irradiating a solution of a provitamin D derivative with the ultraviolet rays having the

specific wavelength emitted from the quartz rod of the ultraviolet irradiation apparatus to cause a photochemical reaction to the provitamin D derivative solution, thereby forming a previtamin D derivative.

The prior art does not contain any language that teaches or suggests the above.

*Firnberg et al.* (US Patent No. 5,374,405) teaches the synthesis of vitamin D (col. 14, claim 23). However, they do not teach wherein the ultraviolet rays having the specific wavelength from the optical system strikes a quartz rod, and irradiating a solution of a provitamin D derivative with the ultraviolet rays having the specific wavelength emitted from the quartz rod of the ultraviolet irradiation apparatus to cause a photochemical reaction to the provitamin D derivative solution, thereby forming a previtamin D derivative.

*Nagano et al.* (US Patent No. 5,748,288) teaches that the optical integrator **3** is a quartz rod (col. 3, line 55 to col. 4, line 22; and Fig. 1). However, they do not teach irradiating a solution of a provitamin D derivative with the ultraviolet rays having the specific wavelength emitted from the quartz rod of the ultraviolet irradiation apparatus to cause a photochemical reaction to the provitamin D derivative solution, thereby forming a previtamin D derivative.

*Mori et al.* (US Patent No. 5,906,429) teaches a filter **16** comprising a quartz substrate (col. 16, lines 17-39; and Fig. 11). However, they do not teach irradiating a

solution of a provitamin D derivative with the ultraviolet rays having the specific wavelength emitted from the quartz rod of the ultraviolet irradiation apparatus to cause a photochemical reaction to the provitamin D derivative solution, thereby forming a previtamin D derivative.

Therefore, a person skilled in the art would not have been motivated to adopt the above conditions, and a *prima facie* case of obviousness cannot be established.

Claims **12-49** would be allowable if rewritten or amended to overcome the claim objection(s) and/or rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

#### ***Citations***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Firnberg et al.** (US Patent No. 5,374,405) is cited to teach a method of conducting a chemical reaction and a rotating fluidized bed chemical reactor.

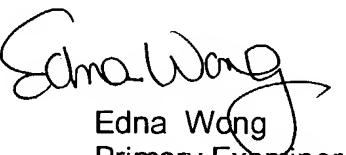
**Nagano et al.** (US Patent No. 5,748,288) is cited to teach an exposure method for exposing an image onto a surface of a substrate and an exposure apparatus for exposing an image onto a surface of a substrate.

**Mori et al.** (US Patent No. 5,906,429) is cited to teach an illumination optical device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 5:00 pm, alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
June 16, 2004